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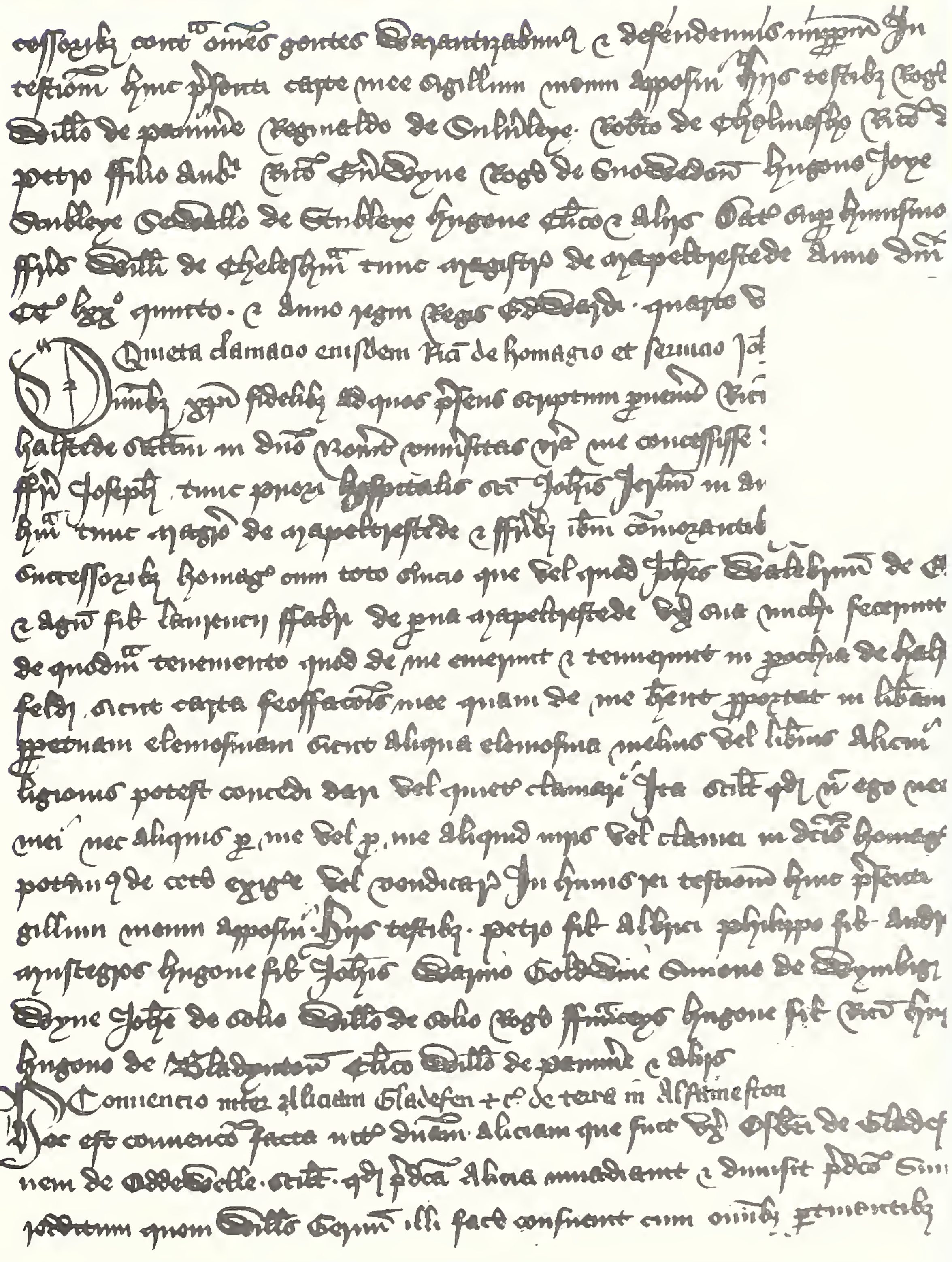

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This month UTCS presents a combined December 80/January 81 issue.

Cover Story

This month's cover photo by Mark Tapia is of a charter in the Cartulary of the Order of St. John of Jerusalem, circa 1260. It is online at UTCS.

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MEDIEVAL STUDIES ...COMPUTERIZED!

PORTRAIT OF A USER

You probably think the medieval period in European history is *ancient* history. Well, compare it with Egyptian civilization whose zenith was in about 1400 *BC*. That makes the medieval period, from about 1100 to 1400 *AD*, seem like yesterday. Our story begins then, a mere seven hundred years ago.

You might even think that you don't know anything about medieval England. You're wrong. Everyone has at least heard of:

- Robin Hood, King John and Richard the Lion Heart
- lords and ladies, monks, knights, castles and cathedrals
- the Magna Carta
- the Crusades - fighting infidels in the Middle East
- the Normans - conquering the Saxons

So, now that you're in the right time frame, let's establish a few facts about the 1200s and 1300s in England that you might not know. (This will set the scene for today, when medieval studies work with MARK IV, a general purpose file management system at UTCS. Believe it or not!)

- Generally speaking, people back then couldn't read or write. Initially only a minority of ecclesiastics in monasteries and scholars in universities were literate.

- Documents were written in Latin, often abbreviated to save paper. See the cover photo.

- Paper (parchment) was as precious as gold or truffles are today. It was a *very* highly-valued commodity.

- Most people were religious. They believed that if they were good in this life, they would be rewarded in heaven.

- One way of being good was to give to the religious order of your choice. You gave what you could - a farthing, a chicken, wax for candles in the chapel... or land.

- These donations and other transactions between 'ordinary' people - real estate etc. - were *documented* by monks (because they knew how to write) in charters, legal acts written on parchment.

This brings us to the present and to a story of documentation called *DEEDS.*

DEEDS

Who?

The main character in this tale is **Professor Michael Gervers,** a medieval historian who teaches at Scarborough College. High up in the interior of University of Toronto's medievalistic monolith, Robarts Library, he orchestrates the progress of *DEEDS - Documents of Essex England Data Set.* He doesn't have to make forays out of his fortress. He's connected by a telephone line to the UTCS computer at McLennan Physical Labs.

Supporting roles are played by Herbert the "Angel" and John the Humanist, known to their UTCS colleagues as **Herb Kugel,** Applications Support Group, and **John Bradley,** Text Services Group.

Where?

Essex is a county, part of England's southeast promontory projecting towards the Continent. Her present farmers are the descendants of the Neolithic communities

continued...

PORTRAIT OF A USER continued

who first worked the land there 5000 years ago. By the medieval period, Essex had already been the home of Bronze Age and Iron Age men and Belgic, Roman and Germanic communities, to say nothing of the Normans in 1066.

The *DEEDS* project is examining about 1200 charters (remember... legal acts or deeds written on parchment) from part of a cartulary of a religious order in Essex. A cartulary is a collection of charters. Professor Gervers works with the Cartulary of the Order of St. John of Jerusalem, or Hospitallers. A summary of a charter from this cartulary of about the year 1260 is:

This transaction is made by me, Robert of Chippenham, blacksmith. I return to Robert of Manby, prior of the Hospitallers, my rights to a household plus 1 1/2 acres of land in Halstead which I formerly held from the Order. Incidentally, this same land and holdings were held by Peter the tailor on the day he was taken before Chief Justice Hugh Bigod at Chelmsford, judged and hanged.

Document #663

What?

Professor Gervers' aim is to identify the medieval individual, the common man, like the two Roberts, Hugh and Peter above.

Historians have written, and will continue to write, the biographies of medieval monarchs and those members of their households about whom sufficient information is available. Valuable monographs have also centred on prominent ecclesiastics, scholars and philosophers, barons and merchants. *The rest of the population, however, lies patiently waiting to be discovered and recognized as historical individuals.* Shall we ever find these lesser souls and be able to assign them a role which can be given historical significance in their society?[1]

Using data accessed from the online Cartulary of the Order of St. John of Jerusalem, Professor Gervers can deduce social and economic developments. For example, by studying who gave to whom the right to certain lands or holdings, he could learn about changes in place and personal names; trends in the value of produce, property and services; the degree of human mobility; settlement patterns, etc. Thus he ultimately studies the interaction of 'ordinary' people with each other in the context of their (material) world.

Why?

By identifying medieval individuals with the help of MARK IV, Professor Gervers can create computerized 'biographies' of a large cross-section of medieval society in Essex county. The same people and/or their families recur again and again in the charters.

Professor Gervers anticipates being able to accurately calculate:

- the relationship of Anglo-Saxon to French inhabitants
- changes in place names and personal names, as mentioned
- the dating of undated charters
- patterns of income and expenditure
- the activity of the real estate market
- economic development in town and country

...to name a few.

To achieve these ends, a vast amount of information has been stored.

How?

MARK IV attempts to analyze medievel charters by providing the historian with the means to quickly extract quantitative data from charters in the order or sequence that suits his purpose. MARK IV assists *DEEDS* by organizing, in various ways, names and date ranges of medieval individuals... millions of them. Interpretation of the charter material, the work of medieval historians, depends totally on having access to *all* of it that is relevant, and there is a lot.

continued...

PORTRAIT OF A USER continued

Incidentally, this total access is further guaranteed following the creation of a concordance. John Bradley of UTCS has written a concordance program (COGS) which can be used to process the text of a manuscript to give a concordance of that text.

Herb Kugel of the Applications Support Group similarly helps *DEEDS* to access people, places and things. Besides encouraging Professor Gervers and his assistants to learn MARK IV, he provided *DEEDS* with automatic sorting and considerable technical help.

Simon of Odewell

A specific *DEEDS* project involved finding out about Simon of Odewell - his role in relationship to other named individuals. Simon was mentioned in 150 charters (out of 970) which were accessed. People who were mentioned with him were compiled into alphabetical and chronological listings - Professor Gervers determined who Simon turned up with ... and when. Some people turned up with him fifty times, some only once. Accordingly, the analytical historian is able to complete an effective social, historical study... "a very good computer application."

An advantage of MARK IV for humanities users not directly involved with statistical analysis is that it allows a user to enter alphabetic codes. Humanities users generally prefer mnemonic letter codes and words because it saves them the trouble of consulting a code book before interpreting printout.

Very briefly, the structure of the *DEEDS* record is hierarchic, with segments of information organized at different levels. The basic unit of entry is the individual charter. The first major area of inquiry is PERSONS. Level two is PLACES. The third major area is PROPERTY. A more detailed description of this breakdown can be found in Professor Gervers' "Medieval Charters and the Computer: An Analysis Using MARK IV" in *Computers and the Humanities,* Volume 12.

This seemingly incongruous union of the MARK IV system with medieval studies is intriguing to programmers on the one hand and to humanists on the other. And it works, possibly because of "angels" who program, programmers who are humanists and humanists who compute.

DEEDS is capable of providing a heretofore incomparable amount and degree of information about medieval individuals and about their relationships to one another and to the property which assumed such control over their lives.[2]

And let's face it, if you believe in computerized cartularies, you might well ask,

How many monks fit in a bit?

Pat Longstaff Smith

---

[1] Gervers, Michael. "Medieval Charters and the Computer: An Analysis Using MARK IV." *Computers and the Humanities.* Vol. 12, pp. 127-136 (1978).

[2] *Ibid.*

UNIVERSITY OF TORONTO COMPUTING SERVICES
CHRISTMAS & NEW YEAR HOLIDAY SCHEDULE

	23	24	25	26	27	28	29	30	31	1	2	3	4	5
	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
APL/ATMS Services	N	N	X	X	SS**	SS**	SS**	SS**	SS**	X	X	SS**	N	N
Academic 3033 Facilities	N	N	X	X	SS	SS	SS	SS	SS	X	X	SS	N	N
DEC-10 Facilities	N	N	UO	UO	SS	SS*	SS*	SS*	SS*	UO	UO	SS*	N	N
CSS Facilities	N	N	X	X	X	X	X	X	X	X	X	X	X	N

Access to EUT, EAT, CSS, Keypunch and terminal facilities in the Engineering Annex will be available at hours when the 3033 is scheduled for operation. Users of other terminal sites should watch for signs or check with their CSR.

On Wednesday, December 24, all services/facilities will be available to 20:00.

The UTCS *offices* will adhere to the holiday hours which are in effect for the University of Toronto, i.e., the offices will be closed from 5 PM Wednesday, December 24 to 9 AM Monday, January 5.

KEY

Academic 3033 - GPJS, HSJS, TSO, WYLBUR
CSS - Communication & Small Systems
DEC-10 - Time-sharing

X Closed

UO Unattended Operation

SS Single Shift
9am - 5pm

N Normal Hours of Service

Communication & Small Systems facilities will be open to Keyholders as usual.

* DEC-10 will be running unattended after 5pm. Service may be interrupted for brief periods to perform system backups, etc.

** APL and ATMS are tentatively scheduled to run unattended outside single shift hours from 17:00 on Saturday, December 27 until 09:00 on Wednesday, December 31 as well as from 17:00 on Saturday, January 3 until 08:00 on Sunday, January 4.

Users should note that this is a tentative schedule and may be altered via HOTNEWS and alert notices closer to the Christmas period.

NEW CONTROLS FOR COMPUTER ACCESS

UTCS is presently working on the installation of a package which will provide users of its IBM services with greatly enhanced security. The package is called Access Control Facility, or ACF2. Security improvements will include individual control over dataset access and access code structures. This article introduces ACF2 and explains how it will improve our services. The information here is general, intended as an aid in planning computer usage. **Specific information that you will need to know before ACF2 is installed will be distributed via mail and HOTNEWS.** USERBOOK will be appropriately updated.

The ACF2 project has been in its planning phase for several months. Its goal is to make the computer easier to understand and use, while providing protection for the work of our users.

Scope of the Project

With ACF2, a record will be kept of every user who is authorized to use the computer. ACF2 will decide (1) who is a valid user, (2) which services of the computer he may invoke and (3) what access he may have to the information stored in the computer's files (datasets). ACF2 will initially control access to the services of the General Purpose Job Stream (GPJS or batch jobs), TSO, WYLBUR and ATMS. In the future, High Speed Job Stream ($ACCT jobs) and APL may also be placed under its control.

Logonids for System Access

Each user is identified by an alphanumeric code called the Logonid. The Logonid is the *access code* you must specify to the computer, along with a password, to start using a service.

Since ACF2 will be controlling the use of batch jobs as well as TSO, WYLBUR and ATMS sessions, people who use more than one of these services will be able to specify the *same* Logonid on all services they use. The authorization of a Logonid to use a particular service is an *attribute* of the Logonid, which may be added or removed at the request of the person who administers the *customer* account that the Logonid is funded by.

Passwords

Each Logonid has a password which is kept in an encrypted form that *cannot* be reversed (one-way encryption). If you forget your password, the accounting office or your account administrator must set a new password for your Logonid. However, assuming you know your current password, ACF2 will allow you to change it yourself when you sign on or off a terminal, or on your jobcard. Whenever a password is required, a new password may be set by typing 'old password/new password.' In fact your Logonid may have been set up with attributes that *require* you to change your password within a certain number of days.

Good bye SACS and Userids

ACF2 will replace our local Service Access Code (SAC) validation system for the above services. The accounting office will supply ACF2 Logonids instead of the old type of SAC in response to requests for access codes. For quite some time after ACF2 is activated however, the system will continue to accept old SACs and TSO and WYLBUR userids that were formerly valid.

Smooth Transition

Before ACF2 is activated, all current users will be given Logonids to replace their active SACs and TSO and WYLBUR userids. As stated, the system will continue to accept all old access codes and methods of usage. This transparency, which requires a

continued...

NEW CONTROLS continued

considerable programming effort from UTCS, will be provided for an ample period of time, allowing all users to convert to ACF2 at their convenience. We shall do our best to make the transition to ACF2 as easy as possible for our users by providing the necessary documentation, information and announcements.

Logonids: Personal or Anonymous

Customer account holders who request access codes will be given a choice of two types of Logonids: personal or anonymous. The accounting system will record the name, address and phone number of the user of a personal Logonid. The Logonid itself will contain a number identifying the user. If the same user receives another access code at a later time, the second Logonid will also contain the user's personal identification number.

Unlike the present system of accounts, multiple Logonids belonging to one user look very similar to each other. Each multiple Logonid differs from the others in that the last character is unique. If the user chooses, he need only remember one password for all of his Logonids.

An additional feature is that users may selectively choose who will be able to share their datasets. Logonids will also give account administrators a clear breakdown of usage by person of computer resources on a monthly report. The only effort that the creation of personal Logonids requires from the account holder is to list the name and address of each user.

Account holders who do not wish to provide a list of names may ask for any number of anonymous Logonids, all having the same attributes.

With the installation of ACF2, we will begin allowing users and account holders to exercise greater control over their own Logonid attributes. Programs and commands to display and change Logonid attributes will be made available and will be easy to use, as well as being well documented. To aid in the manipulation of Logonids, whether it is done by the user directly or by contacting the accounting office, the concept and use of Customer Accounts (CANs) will be clarified and formalized.

Batch Job Submission

The submission of batch jobs from an interactive terminal running TSO or WYLBUR is made much easier and more secure with ACF2. Jobs submitted via the SUBMIT or SCHEDULE commands on TSO, or the RUN command on WYLBUR, will automatically run under the Logonid of the terminal user, *without* specifying a Logonid and password in the JCL. A Logonid and password will be required only if the job is to run under a different Logonid. This should eliminate the need to keep Logonids or passwords in a dataset.

Dataset Usage

Another primary function of ACF2 will be to protect the datasets of users against unauthorized disclosure, modification or destruction. The ACF2 project will also make datasets much easier to use.

ACF2 will ensure that the names of all datasets that a user creates will begin with the user's Logonid. Since the same form of Logonids will be used on all services, the datasets created by users of TSO, WYLBUR and batch jobs will all have the same naming conventions.

Datasets with Logonid prefixes will automatically be billed to the account that the Logonid belongs to. The system will neither require nor allow such datasets to be processed by the registration procedure. No datasets with a valid Logonid prefix will be deleted by the system accounting routines.

Another type of dataset prefix, also to be billed automatically, will allow people involved in programming projects to keep all

continued...

NEW CONTROLS continued

of the datasets for a project under a prefix that is not tied to a personal Logonid.

Each user will have complete access to all datasets whose names begin with their own Logonid. Users with multiple *personal* Logonids will have *full* access to datasets under any of his own Logonids while using any other of their own Logonids. However, by default, no one will be able to create, alter or delete datasets under another person's Logonid.

ACF2 allows the user to change the protection level of any or all of his own datasets. Users will be able to instruct ACF2 to *prevent* anyone else from even looking at their datasets, or to *allow* other users to create and delete them.

ACF2 will be set up in such a way that most users will never need to change the protection of their datasets.

Users who have more stringent or complex needs for controlling the sharing of datasets will easily be able to satisfy these needs using ACF2. The methods of doing this, to be explained fully in later documentation, involve specifying 'access rules' to ACF2 that tell it which group(s) of users should be allowed various types of access to what dataset(s) under your control. This ability is similar to facilities that already exist in our DEC-10 and APL systems.

The dataset prefixes to be used under ACF2 are different from the prefixes currently in use. Use of the current prefixes and of dataset registration for them will continue to be available when ACF2 is installed. A timetable will be established for phasing them out.

Tools and assistance for the conversion of datasets and of existing JCL and software containing dataset names will be provided. ACF2 prefixes will be easier to explain, use and maintain than the current prefixing/registration system. They will also ensure that valuable work is not deleted merely because a user forgot to register a dataset.

A new command will be made available that can be used as a single source of dataset information for batch and TSO users. The command will economically list dataset names, attributes, charges and history and will be able to select datasets to list, based on name (with pattern matching) or account (customer account or Logonid). The command will be able to answer questions such as,

"How much space are datasets under my Logonid taking up?"

and

"What is the total dataset charge so far this month for all Logonids under my customer account?"

Conclusion

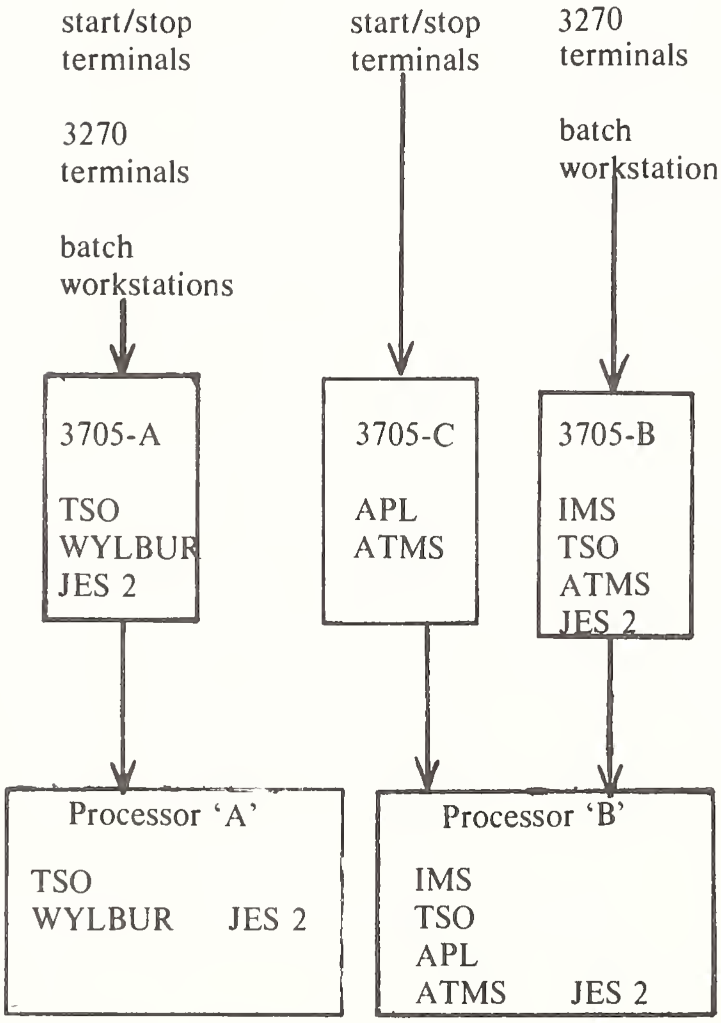
While ACF2 will introduce many new ideas and unfamiliar words, we feel that users will benefit greatly from its implementation. Every attempt has been made to ensure that the transition to ACF2 will be gradual and smooth. Your comments, ideas and questions about the project are welcome and should be directed to a CSR.

Mike Wilde

IBM FRONT END REORGANIZATION

Virtually all devices with access to UTCS computer facilities are connected to the main processor through a front end computer. In the IBM environment the front end machine is a small special-purpose computer known as a 3705. The front end machine provides an interface between the mainframes and the many different devices used on campus, providing communications line control, character code translation and other services.

UTCS is currently reworking its 3705 configuration. The present arrangement actually consists of three different 3705s, connecting two large processors to the outside world. Each 3705 connects devices to a specific subset of UTCS services. Figure 1 depicts this situation.



--- figure 1 ---

The processor marked 'A' provides academic computing services to students and the research community. The 'B' processor supports the university's adminstrative computing needs and provides APL and text processing services. The 3705 marked 'A' provides access to the 'A' processor for all its remote devices. '3705-B' provides access to the 'B' processor for a network of 3270 display terminals and batch workstations used to access text processing and administrative computing services. '3705-C' provides access to the 'B' processor for APL and text processing terminals.

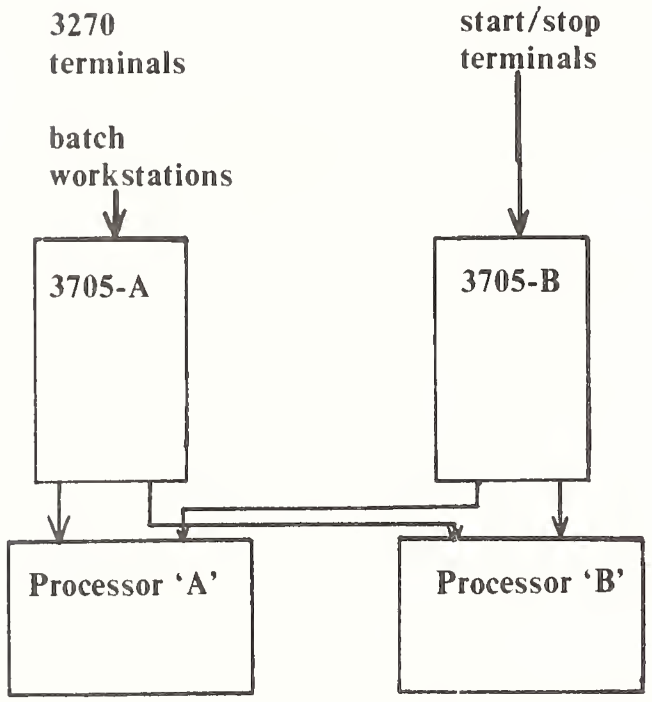
This arrangement provides restricted connection facilities. For example, users connected to APL must disconnect from '3705-C' and obtain a connection to '3705-A' to use TSO or WYLBUR. Depending on the terminal type, this may mean re-dialing the telephone or it could require two separate communications lines. Users of the administrative TSO service cannot connect to academic TSO at all in the current configuration. Similarly, users of 3270 display terminals connected to the 'A' processor may access only one service.

In light of recent software enhancements this arrangement can be improved upon considerably. More services can be made available to users via existing communications paths.

Figure 2 shows the configuration that will be in place by the new year.

continued...

IBM FRONT END continued



--- figure 2 ---

The three 3705s have been reduced to two and, significantly, both processors are now connected to both 3705s. This implies that from a single connection path all terminals can now access both processors and (given appropriate authorization) the services running on them.

To the users of computer terminals, this reorganization means access to all services through a single communications path, whether it be a dialed or hardwired connection. 3270 terminal users can now access all fullscreen services (TSO, ATMS, WYLBUR) regardless of the processor on which they are running.

Since users will be able to access both processors, UTCS will gain some flexibility in the placement of services on specific processors. This should improve the reliability and availablility of the IBM services. In the event of a prolonged hardware failure on one processor it may be possible to move some of the affected services to the other machine. Similarly, when one processor is required for software or hardware maintenance, some of the affected services may be moved to the available processor.

From a long term point of view, UTCS' growth and capacity planning will be made easier by this reorganization.

Tom Milligan

MORE COMPUTER MOVES

Once again UTCS is preparing for several computer moves to take place during December. These moves are necessary because UTCS must vacate the first and second floors of the Burton Wing of the Sandford Fleming Building, to allow the next phase of the renovation project to proceed.

Our first effort involves the move of the DEC-10, its peripheral devices and supporting material to the McLennan Physical Laboratories. Renovations and existing machine re-arrangements are already in progress to accommodate this system. At this point, the estimated service outage is from Friday, December 12 to Sunday, December 14, with service restored on Monday at 0900.

Commencing Monday, December 15, 1980, the Communications and Small Systems facilities will move to the third floor of the Sandford Fleming Building. The move should take two days to complete. This location is an interim one, until renovations on the second floor are complete later in the year. At that time CSS may once again be moved back to its original location on the second floor.

Finally, on Friday, December 19, 1980, the PDP 11/70 system will be disassembled for another weekend move to the McLennan

continued...

MORE COMPUTER MOVES continued

Physical Laboratories. Again, UTCS' plans call for a successful completion of the move and restoration of service on Monday, December 22 at 0900.

It should be noted that the space made available on the third floor of McLennan Labs for the continued operation of the DEC-10 and the PDP 11/70 is extremely tight. The third floor has been rearranged for temporary accommodation with more final arrangements in the summer of 1981. This will involve the reorganization and reconstruction of Physics Labs on the 2nd floor of McLennan Labs.

These moves have been isolated and separated in time to allow UTCS to maintain complete control of all aspects of the projects and to avoid undue congestion in the building facilities and loading areas. **Precise times of service interruptions will be advertised in advance of these activities.**

UTCS hopes that our users will bear with us throughout this period and will accommodate any inconvenience that these service interruptions cause.

R. Cox

DECSYSTEM-10 NEWS

DECsystem-10 to Move

UTCS' long range plan to physically consolidate all its equipment and services in one location will soon be carried one step further. On Friday, December 12, the DECsystem-10 will move from its present location in the Sandford Fleming Building to the main UTCS machine room in McLennan Physical Laboratories.

It is expected that the system will be down for approximately two days. DECsystem-10 users will be kept up-to-date on the situation by means of the online login notice (see SYS:NOTICE.TXT).

Also see *More Computer Moves,* the previous article.

TOPS-10 Version 7.01 is Here

Digital Equipment Corporation's long awaited upgrade of the DECsystem-10 operating system has finally arrived. In addition to version 7.01 of the TOPS-10 operating system itself, this major new software release includes maintenance releases of several important CUSPs (Commonly Used System Programs) as well as an improved version of the DN87 front end communications software (which controls users' terminal I/O).

The many new features of 7.01 have been described in detail before. Interested readers should look in the Jan-Feb/80 and Apr/80 issues of *COMPUTERNEWS.*

During the next two months UTCS personnel will evaluate these products with the goal of gradually introducing them into our production environment. Many of the CUSPs are monitor independent. These will be made available to users almost immediately. Others will have to wait until 7.01 itself has been brought up.

Users of the DECsystem-10 will be kept informed of the upgrade schedule by means of the online login notice.

Dr. Edmund West

DEC-10 USER FORUM

UTCS is pleased to announce that those with an interest in the DECsystem-10 will have an opportunity to meet with each other and with members of the DEC-10 support group.

The third in a series of DECsystem-10 User Forums has been tentatively scheduled for Wednesday afternoon, January 21, 1981, from 2:00 to 4:00 P.M. in room 202 of the Galbraith Building. Watch the online login notice on the DEC-10 for further information.

It is intended that the meeting will be informative to both the users and the UTCS staff alike. Everyone is invited to attend simply to listen, to ask for information or to express their opinions. Possible topics include the new 7.01 TOPS-10 operating system, the effect of moving to UTCS' McLennan machine room, system performance, user courses, operations, public terminal areas, plans for PACX, suggestions for programs (e.g, RUNOFF), etc. Any subject will be fair game.

As a final incentive, attendees will be invited to partake of a variety of refreshments to be provided by UTCS.

Dr. Edmund West

REPORT ON FALL '80 DECUS

The Fall, 1980 meeting of the Digital Equipment Corporation Users Society (DECUS) was held November 4-7 at San Diego's Town and Country Hotel. Almost 4000 users of DEC equipment gathered to compare notes, discuss common problems and hear Digital's plans for the future. The fact that the first day of the conference coincided with the recent U.S. election added a small amount of extra-curricular spice to the proceedings.

Operating System

The big news for DECsystem-10 users was that TOPS-10 version 7.01 had finally been released. Most of its features have been well known for over a year as a result of sessions at past DECUS conferences. Thus, a session of particular interest was one describing field test site experience with 7.01. The consensus was that it was an excellent product with many new attractive features for system programmers and users alike, not the least of which is vastly improved reliability.

In light of the fact that Digital's main goal in developing the 7-series monitors was to support SMP (Symmetric Multi-Processing), it is interesting to note that the demonstration area at the conference had several user terminals connected to a DEC in-house system consisting of three KL10 processors in a tightly coupled configuration (all CPUs directly connected to the same shared main memory including the single copy of the reentrant operating system). Not surprisingly, the performance of this system was quite impressive.

Work is progressing on TOPS-10 version 7.02. The main emphasis there will be on performance, both CPU and I/O. 7.02 will not be available until at least early 1982.

System Software and Languages

The sessions on system software and languages were rather lean. Although several products are due for maintenance releases over the next year, the only ones

continued...

REPORT ON FALL '80 DECUS continued

which seem to be imminent are those related to the 7.01 release. BACKUP and CREF are scheduled for release in April while PIP and COMPIL should be available by June.

In the area of languages it is expected that new versions of ALGOL and APLSF will be released around next November. It was also reported that an updated version of the University of Pennsylvania BASIC (the one used at UTCS) will be released soon through the DECUS program library service. It was not certain how long this process would take.

COBOL-68/74 version 12B and SORT version 4D are presently in field test, but no date was given for a possible general release. Users were warned that COBOL-74 is not a superset of COBOL-68; the two language standards have some incompatibilities. DEC believes that COBOL-74 is the trend of the future. However, DEC is committed to supporting both the 68 and 74 versions. (UTCS runs only COBOL-68.)

FORTRAN version 6 is still in field test. The main focus of this release has been to provide the groundwork for the 1977 standard which will become fully supported with the release of version 7. This has involved a major rewrite of FOROTS, the sharable object time system. This has resulted in new features such as more user control of error handling, the new FORTRAN-77 format descriptors and OPEN arguments, faster random I/O and many others. Also the accuracy of the mathematics routines in the FORTRAN library has been significantly improved. In addition there have been minor enhancements to the compiler itself.

The next updates of MACRO (the DEC-10 assembler language) and LINK (the linking loader) are expected about next Spring. The performance of both of these products has been improved. Also LINK will support type checking of variables and FORTRAN-77 writable overlays.

Version 4.1 of the GALAXY batch system, the first new release for TOPS-10 sites in over three years, has just started field test. It is expected to become available sometime next summer. The main new features of interest to users are the new Mountable Device Allocator, support for labeled tapes, a user program interface for queueing files and a new method of communicating with the operator. This package will also include the HASP Multileaving upgrade for the IBM link.

New Hardware

There were several sessions and displays concerned with the RP20, DEC's new high density Winchester technology disk drive. These 1200 MByte devices consist of two sealed modules each with its own dual head assembly built into the same cabinet. As many as four units (eight modules) can be connected to a single channel. After formatting, each RP20 is the equivalent of almost five and a half RP06s (the disk drives in use at UTCS).

Obviously high capacity drives of this kind raise serious questions concerning file backup/restore procedures. The system resources used simply to copy the contents of the disk to tape can be a significant system load. DEC is actively investigating this problem. One step in this direction is for operating systems to support 'virtual disks' (more than one file structure on a single module). This feature is expected to be available in TOPS-10 version 7.02.

There were also a few vague comments regarding DEC's long range plans. For example, the processor which will eventually be the follow-on to the KL10 is now known as the 'Jupiter.' Its previous code name was the '2080'. In this context it is worth noting that DEC is committed to the consolidation of their hardware offerings. This means that all their future systems will run either TOPS-10 or TOPS-20. It is also expected that DEC will soon be offering a (comparatively) inexpensive 6250 bpi magnetic tape drive, probably to be known as the TU78.

continued...

REPORT ON FALL '80 DECUS continued

Networks

Much of Digital's effort in recent years has been directed toward the development of DECNET, a system for organizing many DEC computers into a large network of interconnected computers. Recently DEC announced 'DECNET Phase III'. Under this plan DECNET will encompass several systems which previously could not be part of DECNET (the DECsystem-10, for one). In addition interfaces for certain non-DEC systems (e.g., IBM systems using SNA) and public packet switching networks (such as Bell Canada's Datapac, using the X.25 protocol) will become part of the DECNET capability.

Several of the sessions at DECUS were concerned with the details of Digital's plans for implementing DECNET. One of these described how a network could be efficiently managed with respect to such issues as changing the path through the network used for communication between any two of its nodes or performing maintenance on one node while the rest of the network continues without interruption. Another session dealt with the MCB (Multi-function Communications Base). DEC intends to use this PDP-11 based general purpose communications front end to implement most of their network plans. Ultimately it will support DECNET and a variety of distributed processing functions, such as terminal concentration, X.25 and SNA.

In summary, the conference was interesting and useful for DEC and their customers alike. DECUS conferences are clearly the best forum by which DEC's customers can learn about DEC's future plans and in turn implement those plans. The next DECUS Canada Symposium will be held in Montreal on February 16-19. The next U.S. DECUS conference will be held May 18-21 in Miami Beach.

Dr. Edmund West

ELECTRONIC MAIL: COMPUTER-BASED MESSAGE SYSTEMS

Last month I attended a seminar on 'electronic mail' in Washington, DC, conducted by BBN (Bolt, Baranek & Newman). A wide variety of interests were represented, from potential users of electronic mail services to those who were planning or actually implementing such systems.

While most computer users have heard the phrase 'word processor,' far fewer have heard of the term electronic mail. Basically, electronic mail is a system for transmitting a message from a sender to a receiver using an electronic device.

There are four fundamental types of electronic mail systems:

- facsimile - devices with no intelligence which allow copies of documents to be transmitted from one location to another
- communicating word processors
- message switching systems - i.e., telex or TWX - This system is used for world wide communications.
- computer-based message systems (CBMS)

The last type offers the most power and flexibility and is probably the future direction for electronic mail.

What is a CBMS?

CBMS is an electronic mail system which is implemented using a computer. The computer allows messages to be stored, received and transmitted using electronic mailboxes assigned to each end user.

What advantages does CBMS offer over the ordinary mail system?

continued...

ELECTRONIC MAIL continued

Messages can be transmitted quickly. Transmission time is virtually independent of distance.

Telephones are also fast. Is CBMS any better than the telephone?

While CBMS does not encourage interactive communication, it does offer several advantages over the phone:

- 100% of CBMS messages are transmitted the first time, while less than 3 phone calls out of 10 are completed the first time. Phone converversations may be completed quickly when both parties are available. However, it is not uncommon for several hours (or even a day) to elapse before both the sender and receiver actually talk to each other.
- CBMS is faster. Phone calls average 9 minutes, with 3 minutes spent trying to get the receiver. The same amount of information can be sent in 3 minutes by CBMS.
- Messages may be viewed at the receiver's convenience and sent at the sender's convenience. For locations separated by large time differences, this is a distinct advantage.
- The same message may be transmitted to more than one user at the same time.

What CBMS systems does UTCS offer?

We currently offer limited forms of CBMS on UTCS systems.

- The DEC-10 mail system is the most heavily used. DEC-10 is the only UTCS service currently available through national (DATAPAC) and international (Telenet, Tymnet, British Post Office, etc.) networks. The DEC-10 mail system has been heavily used by professors abroad on sabbatical, allowing them to communicate with their secretaries and graduate students. For local users, the mail system provides a simple mechanism for transmitting files from one user to another.

  The mail system allows the following actions to be taken for mail messages:

  a. examine
  b. delete
  c. copy to a file
  d. hold
  e. forward to another user

  The action may be performed before or after the message is viewed. More information is contained in the mail help and doc files (HLP:MAIL.HLP and DOC: MAIL.DOC).

- ATMS - This system allows messages to be transmitted from working storage to another user. The message can then be retrieved by that user into his working storage.
- APL - APL offers a mailbox system currently accessed by approximately 20 users. Documentation is available in library 750 in MAILHOW.
- TSO - TSO allows users to send messages to other TSO users by means of the SEND command. Messages can be sent directly to users who are logged on or can be sent the next time the user logs on. For further information, type "HELP SEND" in READY mode.

Realizing that the current UTCS mail systems have limitations, we are working to find better solutions. Users interested in our present mail systems should contact a CSR; those interested in discussing future directions that UTCS will take should contact me at 978-7133.

Mark Tapia

1980 ACM SIGUCC NEWSLETTER CONTEST

The following is a letter, dated October 9, 1980, to Mrs. Janet Barr, the previous editor of *COMPUTERNEWS:*

On behalf of the ACM Special Interest Group on University Computing Centers, I would like to extend my congratulations to the University of Toronto Computing Services for receiving an honorable mention in the 1980 ACM SIGUCC Newsletter Contest.

Judging was based on the general categories of physical appearance, organization, content, and style and was done by members of the University of Colorado computing community. Under separate cover you will be receiving additional information regarding the contest and the other contestants.

There will be a special display of winning entries at the November User Services Conference in Morgantown, West Virginia.

Keep up the good work with *COMPUTERNEWS.*

Sincerely,

Jean Bonney
Chair, SIGUCC

UTCS is very proud to have received this honor and we are delighted that *COMPUTERNEWS* was displayed at the SIGUCC conference. We thank the judging committee for their recognition of *COMPUTERNEWS.*

SAS RECODE

SAS is a very powerful statistical language with a great many features. A new feature being installed, whose implementation is planned for about December 15, 1980, is the RECODE feature, a useful data manipulation tool as may be seen in the following description.

The researcher frequently needs to replace the value of some or all variables with new values. In the past, the typical approach to solving this problem was through multiple IF-THEN statements. This approach is often lengthy and inefficient as well as being inadequate for some types of value changes.

RECODE has been designed as a comprehensive and efficient solution to the problem of value substitution. RECODE features a simple SAS-like syntax and incorporates typical SAS parameters and options such as DATA, OUT and FUZZ. This procedure can handle a wide variety of recoding situations such as collapsing a range of values into a single value; converting numeric values to character values and character values to numeric values; checking for high and low values of a variable; and performing limited character string manipulation.

A user's guide on RECODE has been made available to all CSRs and is also available in the Information Office.

Users may print this manual by coding:

```
 // EXEC SASRECOD
```

This will print the manual on UTCS form 2018 which is 9 1/2" x 11", 1 part blank, 6 lines/inch.

UTCS users should watch the GPJS and SAS HOTNEWS listing in early December for further information.

Herb Kugel

5.1 WYLBUR IS COMING

In early February of 1981, release 5.1 of WYLBUR will be in place at UTCS.

Among the new features of 5.1 is full-screen editing, the defining of your own commands and a new interface to JES 2 that will solve the 'output fragmentation' problem in the current version.

Concurrent with 5.1's arrival, UTCS will be offering two short courses: "An introduction to WYLBUR" and "WYLBUR for advanced users." As well, there will be a short half-day seminar on the changes between version 3.0 (our current WYLBUR) and 5.1.

If you are a Customer Account Number (CAN) holder, and you are interested in signing up for a WYLBUR course to be held in February, please call the Information Office at 978-4990 and leave your name, campus address and phone number. We will contact you early in the new year with course times and dates.

David Reed

WYLBUR FOR RJE

There was a time when keypunches and card readers reigned supreme in any large scale computing environment. We all know the frustration of having to re-read hundreds of cards because of a simple keypunching error. We know of the wasted time spent running back and forth from the keypunch to the reader.

Well, times have changed. Keypunches and card readers are on the way out and interactive job submission and editing is on the rise. WYLBUR at UTCS is one way to save yourself the trouble of lugging around cards.

WYLBUR has been here for the past three years. In that time, it has been accumulating a rather dedicated user group who, if given the choice, would rather fight than switch back to cards and card readers. WYLBUR users enjoy fast response time, and have the ability to submit, retrieve, inspect and finally print their output -- all from a terminal.

WYLBUR is easy to learn and UTCS provides the beginner with manuals and advising support. As well, WYLBUR courses will be offered in the new year, along with a newer, more powerful release of WYLBUR.

Conversion from punched cards to WYLBUR is easy. You simply read all those cards in one last time, using a special procedure provided with WYLBUR. From then on you will never wait in line at a card reader or fight for a keypunch.

Your CSR would be pleased to give you more information on WYLBUR at UTCS. In the meantime, remember that you may never have to punch again!

David Reed

SP/K UPDATE

A test version of SP/K has been installed on the High Speed Job Stream. This version supports the SP/8 subset of SP/K, while the production version supports SP/7. The features of SP/8 include the following:

1. Structures - A restricted form of PL/I structures is now allowed. However the by name option is not supported. Assignments of values to structures must be made at the element level.
2. File I/O - Record-oriented I/O is now supported for input and output operations. The READ, WRITE and CLOSE statements have been implemented. Only structure variables may be used in READ and WRITE statements. Record-oriented I/O using scalar variables is not supported.
3. Files - SP/K now supports files with the record attribute. The only files which are currently supported are the following scratch files: FILE1, FILE2, FILE3 and FILE4. At any one time, at most three files may be open.

Users who wish to access the SP/8 version should use the following $JOB card:

```
$JOBM
```

The options available on this card are identical to those previously documented on the HSJS reference card and in USERBOOK module 3.6HSSPK.

Additional details on SP/8 are contained in Appendix 1 of the textbook **Structured Programming Using PL/1 and SP/K** by J.N.P. Hume and R.C. Holt, University of Toronto.

Users are cautioned that this is a test version and that it may contain bugs. Users experiencing problems with this version of SP/K should consult the advisor or CSR at their location.

Mark Tapia

DCS LIBRARY RE-LOCATES

The Department of Computer Science Library moved from the McLennan Labs on November 17/80 to a new location at 121 St. Joseph Street, Room 7 (lower level). Business continues as usual.

ATTENTION... USERS AT AFFILIATED ORGANIZATIONS

On August 1, 1980, UTCS increased service rates by 10% for affiliated organizations. We also withdrew Class C and E privileges from this group. Since then, several users at these organizations indicated that they have cross-appointments with the University of Toronto. Since their work generally involves research, they believe they are eligible for services at normal UTCS rates and should also have access to Class C and E services.

UTCS investigated this situation and has consequently established the following policy:

continued...

ATTENTION continued

UTCS will offer full services at University rates to University of Toronto faculty members with affiliated organizations, provided the following four conditions are met:

1. The faculty member must have a cross-appointment with the University of Toronto and the affiliated organization.
2. The chairman of the applicant's University of Toronto department must approve the application.
3. The UTCS account must be used strictly for research purposes and the title of the research must be supplied.
4. The termination date of the research must be provided or the research must be indicated as ongoing.

If you can satisfy the above conditions, please complete the accompanying tear-out form. Return it as soon as possible to Mr. Ihor Prociuk, at the address shown. If the application is approved, the additional 10% charged since August 1, 1980, will be credited to the appropriate Blanket Purchase Order Account. UTCS will not give credits for affected accounts after February 1, 1980.

If you have other questions regarding these procedures, please feel free to contact Mr. Prociuk at 978-6875.

Ihor Prociuk

TWAS THE NIGHT BEFORE DUE-DATE

Twas the night before due-date
and all through the shop
All the students were working,
even those with marks top.

The card decks were stacked
in the hopper with care,
In hopes that good output
soon would be there.

The tutors were nestled
all smug in their chairs,
Awaiting big paychecks
which soon would be theirs.

Me at a keypunch,
my friend with a pen,
Were trying a program
for diagrams Venn.

When all of a sudden
there arose such a clatter,
I ran to the printer
to see what was the matter.

Away to the printer
I hastened my mass.
I examined the buttons
and looked through the glass.

When what, to my bloodshot
eyes, should appear,
But a crazed operator
with a smile very queer.

"The ribbon has shredded,
the papers run out
Over all of the errors
you caused, you big lout."

I ran to the advisor ,
whose first name was Telly.
He was greasing a disk drive
with petroleum jelly.

An answer he gave me,
(and called me a clown).
He said, "Don't...I say, don't
make the system go down!"

So off to the terminal
I ran once again
To try that damn program

continued...

APPLICATION FOR UTCS UNIVERSITY RATES

Conditions

UTCS will offer full services at University rates to University of Toronto faculty members with affiliated organizations provided the following four conditions are met:

1. **The faculty member must have a cross-appointment with the University of Toronto and the affiliated organization.**
2. **The chairman of the applicant's University of Toronto department must approve the application.**
3. **The UTCS account must be used strictly for research purposes and the title of the research must be supplied.**
4. **The termination date of the research must be provided or the research must be indicated as ongoing.**

APPLICANT TO COMPLETE THE SECTION BELOW

NAME ______________________________

U OF T DEPARTMENT ______________________________

ADDRESS ______________________________

____

____

____

NAME OF AFFILIATED ORGANIZATION ______________________________

RESEARCH TITLE ______________________________

____

____

RESEARCH TERMINATION DATE ______________

______________________________ Signature of Applicant

______________________________ Signature of U of T Chairman

CURRENT UTCS ACCOUNTS

BPOA	______	BPOA	______	BPOA	______	BPOA	______
CAN	______	CAN	______	CAN	______	CAN	______
CAN	______	CAN	______	CAN	______	CAN	______
CAN	______	CAN	______	CAN	______	CAN	______
CAN	______	CAN	______	CAN	______	CAN	______

Applicants should complete the above form and also send a letter stating the name and address of the person responsible for paying UTCS invoices. Return the form and letter to:

Mr. Ihor Prociuk
University of Toronto Computing Services
49 St. George Street, Room 205
Toronto, Ontario
M5S 1A1

TWAS THE NIGHT continued

for diagrams Venn.

Now printer! Now reader!
Now cardeck! No errors!!
No syntax! No logon!
Nor bloody time-sharers!

But still it was wrong.
My mark will be Fail.
My parents will 'kill' me,
or worse... kick my tail.

But then through the mail
a suggestion appeared.
It had come from a friend
who's smart, although wierd.

So I wrote all my comments
and polished them bright,
And trimmed them all neatly
so they'd fit in just right ...

* * *

My program had worked!
I handed it in.
I was oh so happy,
I even did grin.

But my teacher exclaimed,
as he cancelled the class,
"It's one minute late.
You've lost marks you dumb ass!"

So off to his office
I ran in a hurry.
I left him a note
that caused him to worry.

It was written in blood,
its message concise,
"Its Christmas dear prof.
You could've been nice!"

* * *

So to all you computers
and students, HAVE CHEER.
A merry Christmas to all
and a Happy New Year!

S.J.R. Boily

S.J.R. Boily rhymes as well as computes. He studies computer science at U of T (third year).

PERSONNEL CHANGES

This month Eric Haberfellner left UTCS Services Support for employment elsewhere, as has Anthony Nave, formerly with Academic Computing. We extend best wishes to them in the future.

Welcome to Stella Barry, new Computer Operator in Operations as of November 17.

Theresa Veira

UTCS SYSTEMS

3033/N8A PROCESSOR

- located in McLennan Physical Laboratories
- provides General Purpose Job Stream, High Speed Job Stream, TSO, WYLBUR
- 8 megabytes of memory
- MVS with JES2

3033/N8B PROCESSOR

- located in McLennan Physical Laboratories
- provides administrative IMS/VS DB/DC Batch, TSO, MVS/APL and ATMS services
- 8 megabytes of memory
- MVS with JES2

DECSYSTEM-10 Model 1090

- located in Sandford Fleming
- provides General Purpose Time-Sharing
- 256 K - 36 bit words of memory
- TOPS-10 operating system

COMMUNICATIONS & SMALL SYSTEMS (CSS)

- located in SF106
- DEC GT44 System with PDP-11/40 CPU
- 2 Z80 based microcomputers
- Radio Shack TRS-80
- Western Digital Pascal MicroEngine
- Apple II Plus
- DEC GT40 System with PDP-11/05 CPU
- provides specialized graphics and interactive graphics
- provides online and real-time computing services, data acquisition and minicomputer services

UTCS DIRECTORY

POSITION	ROOM	CENTREX PHONE NUMBER
Director		
Dr. Doron Cohen	MP350	8948
Associate Directors		
Rein Mikkor	MP350	5058
Al Heyworth	MP350	4936
Faculty Liaison Officer & Manager, Text Services		
Dr. Frank Spitzer	MP350	4619
Manager, Communications & Small Systems		
Eugene Siciunas	MP350	4967
Manager, Operations		
Derry Cox	MP350	7092
Manager, Systems		
Ward Beattie	MP350	3579
Manager, Academic Computing Services		
Ralph Lombardi	MP350	7130
Manager, Administrative Computing Services		
Bill Lauriston (Acting Manager)	SG201	6877
Manager, Services Support		
Don Gibson	MP350	5568
Administrative Officer		
Suzan Fawcett	MP350	4428
Information & Accounting Office		
General Inquiries	EA206	4990
Accounts		
Aggie Stevens (U of T)	EA206	8702
Sylvia May (External)	EA206	7148
Supervisor, Accounting & Information Services		
Marg Doherty	EA209	3960
Access Codes		
Michelle Mulé	EA206	8703
Supervisor, Communication Systems		
Walter Rosocha	SF105	7087
Programming Services		
Bill Lauriston	SG201	6877

UTCS DIRECTORY continued

Entry Services

Supervisor		
Vera Cabanus	MP368	5040
Text Entry		
Dale Wright	MP368	4565
Data Entry		
Zelda Anderson	HU405	5273
Keypunching		
Dale Wright	MP368	4565

Tape Librarians

Academic Services	MP368	7319
Administrative Services	MP368A	6693

Supervisor, Applications

Herb Kugel	SG304	7286

Computing Services Representatives

Engineering Annex Terminal		
Sue Chong	EA201	4357
Program Advisors	EA103	4516
Time-Sharing Support		
TS Advisors	SG204	6465
John Mavity	SG204	7109
Erindale		
Peter Wall	2043	828-5311
Scarborough		
Bob Blackburn		284-3173
Arts and Science		
Bill Fehlner	SS2133	6509
New Physics		
Bob Chambers	MP1202	8823
External		
Ihor Prociuk	SG205	6875,6885

Supervisors, Operations

Paul Scarborough (IBM 3033N8A)	MP335	6220
Krishna Patnaik (DEC-1090 & CSS)	SF106	4086
Dave Wong (IBM 3033N8B)	MP335	6864

Key:

EA = Engineering Annex
SF = Sandford Fleming
SG = 49 St. George
SS = Sidney Smith
HU = 215 Huron St.
MP = McLennan Physical Laboratories (New Physics)

Job and System Status Queries

SYSTEM/3033,TSO	7373
ATMS/APL	6234

Time-Sharing Services	Dial-Up
APL,ATMS	7200 Centrex 7201 Non Centrex
TSO,WYLBUR	6200 Centrex 6201 Non Centrex
DEC-10 Services	4224 Centrex 4244 Non Centrex
PHONE-IN ADVISING	6465

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of toronto
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Please ___ add

___ change

___ delete my name and address.

NAME and ADDRESS, in full	PREVIOUS NAME and ADDRESS, in full
______________________	______________________
______________________	______________________
______________________	______________________

___ Check here if you can receive COMPUTERNEWS by campus mail.

Return to:

University of Toronto Computing Services,
Information Office,
Room 206,
11 King's College Road
Toronto, Ontario
M5S 1A1

UNIVERSITY OF TORONTO
COMPUTING SERVICES
TORONTO, CANADA

CAMPUS DELIVERY

MISS KATTA
SERIALS DEPARTMENT
ROBARTS LIBRARY
UNIVERSITY OF TORONTO